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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,814	12/09/2003	Kenji Ando	CU-3482 RJS	5740

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EXAMINER	
JACOB, MARY C	

ART UNIT	PAPER NUMBER
2123	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/731,814	ANDO ET AL.	
	Examiner	Art Unit	
	Mary C. Jacob	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The response filed 6/26/07 has been received and considered. Claims 1-4, 6-16 have been presented for examination.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/26/07 has been entered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The rejections of claims under 35 USC 112, second paragraph, recited in the Office Action dated 3/26/07, not repeated below, have been withdrawn in response to the amendments to the claims, filed 6/26/07.

5. Claims 8-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 8 recites "a method of producing paint", and a last step of "producing the ingredient determined paint *formula*". This claim is unclear because while the preamble is directed to "producing paint", the end result of the claim produces the "paint formula", not the paint. Further, the use of the word "producing" renders the claim unclear. For example, "producing" the "paint formula" can be interpreted as displaying the paint formula on a computer screen, which would be repetitive of the limitations of claim 1. Further, "producing paint" can be interpreted as "manufacturing" paint, or, in the context of "using the server computer", to set forth or exhibit the paint using some rendering of the paint in a computer animation.

7. Claim 9 recites, "...thereby to form the ingredient-determined paint *formula*...". A formula is interpreted to be a "recipe" of different quantities of ingredients that, when the actual ingredients are mixed together according to this formula, a paint of desired parameters will be produced. It is unclear how "mixing paint ingredients" can form a "paint formula" since the ingredients are physical things and a "formula" is a "recipe" that can be written down on a piece of paper or stored in a computer program, not created with physical things.

8. Claim 10 recites "painting an object with the produced paint as claimed in claim 8". Claim 8 produces a "paint formula", therefore, it is unclear where physical paint is created that could be used to paint an object.

9. Claim 11 recites, "painting an object with the mixed paint as claimed in claim 9". Claim 9 produces "paint formula", therefore, it is unclear where physical, mixed paint is created that can be used to paint an object.

Claim Interpretation

10. Claim 8 recites, "producing the ingredient determined paint formula". For the purposes of examination, this limitation was interpreted as, "producing the ingredient determined paint" according to the determined paint formula of claim 1.

11. Claim 9 recites, "mixing paint ingredients"..."thereby to form the ingredient-determined paint formula...". For the purposes of examination, this limitation was interpreted as, "form the ingredient-determined paint" according to the formula determined in claim 1.

Claim Rejections - 35 USC § 101

12. The rejections of the claims under 35 U.S.C. 101, recited in the Office Action dated 3/26/07, have been withdrawn in response to the amendments to the claims, filed 6/26/07.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 1-4, 6, 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder et al (US Patent 5,907,495) in view of Kulczycka (US Patent 6,717,584).

15. Snyder et al teaches: (claims 1 and 14) a method of designing paint comprising the steps of: acquiring color numerical information of a designated color from a client computer connected to the server computer (column 3, lines 32-47; column 4, lines 9-26; column 10, lines 53-60); determining ingredients of the paint based on the acquired color numerical information and paint ingredient information thereby to form an ingredient-determined paint formula (column 2, lines 10-13; column 11, lines 61-65; Figure 4, elements 405-409); outputting the ingredient-determined paint formula (column 2, lines 10-13; column 13, lines 23-25 and 39-41); (claims 2 and 15) converting color information corresponding to a color into the color numerical information (column 3, lines 20-47); (claim 3) wherein the client computer has a three dimensional color display unit through which the designated color is input (column 4, lines 16-26; Figure 6 and description); (claim 4) wherein the ingredients of the paint are determined by computer color matching (column 11, lines 45-60); (claim 6) wherein the color numerical information acquired from the client computer is one of a multi angle spectral reflection

factor and a various angle spectral reflection factor (column 3, lines 41-61); (claim 12) a computer program for causing a computer to perform the method of designing paint as claimed in claim 1 (column 8, line 63-column 9, line 3; column 12, lines 14-26; Figure 7). As to claim 13, Snyder et al teaches a computer program performing the method of designing paint as claimed in claim 1 (column 8, line 63-column 9, line 3; column 12, lines 14-26; Figure 7), such as Microsoft Excel, and it is understood that this computer program must be stored on a computer readable recording medium in order to be executed to perform the method as taught by Snyder et al. Snyder et al further teaches that paint validation, the successful conformance testing of paint against predetermined criteria, is well known in the art (column 6, lines 46-48) and teaches the mixing of paint samples and painting objects with the mixed paint (column 8, lines 57-63; Figure 2, element 205-207).

16. Snyder et al does not expressly teach (claims 1, 14) predicting performances of the ingredient-determined paint formula based on paint performance prediction information of the determined ingredients, the paint performance prediction information obtained through previous experience, wherein at least one of painting workability, coating film performance and paint performance is predicted as the performance of the ingredient-determined paint formula; and verifying the predicted performances of the ingredient-determined paint formula; (claims 8, 10) producing the ingredient determined paint and painting an object with the produced paint; (claims 9, 11) mixing paint ingredients at a painting line side based on the determined ingredients, thereby to form the ingredient-determined paint and painting an object with the mixed paint.

17. Kulczycka et al teaches that accurate simulation and rendering with virtual paint in the automotive industry has many benefits including less preparation time involved in visualizing virtual paints than painting a real vehicle, saving money by limiting the number of vehicles that are needed for paint evaluation that have to be painted, stored or shipped, and allowing preliminary automotive paint selection using a computer-generated visualization for initial screening of potential paints (column 2, lines 3-15) and therefore, teaches a method for visualizing automotive paints applied to computer-generated three-dimensional virtual vehicles (column 3, lines 48-50) that includes (claims 1, 14) predicting performances of the ingredient-determined paint formula based on paint performance prediction information of the determined ingredients (column 6, lines 52-56 and lines 60-65; column 10, lines 15-37), the paint performance prediction information obtained through previous experience (column 5, line 42-column 6, line 7; column 7, lines 41-60), wherein at least one of painting workability, coating film performance and paint performance is predicted as the performance of the ingredient-determined paint formula (column 6, lines 52-56 and lines 60-65; column 10, lines 15-25); and verifying the predicted performances of the ingredient-determined paint formula (column 6, lines 52-56 and lines 65-67; column 8, lines 31-35; column 10, lines 39-44); (claims 8, 10) producing the ingredient determined paint formula and painting an object with the produced paint (column 7, lines 19-37 and lines 41-46); (claims 9, 11) mixing paint ingredients at a painting line side based on the determined ingredients, thereby to form the ingredient-determined paint and painting an object with the mixed paint (column 7, lines 19-37 and lines 41-46).

18. Snyder et al and Kulczycka et al are analogous art since they are both directed to the design and production of automotive paint.

19. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of designing paint as taught by Snyder et al to include predicting performances and verifying the predicted performances of the ingredient determined paint as well as producing, mixing and painting an object with the produced or mixed paint as taught in Kulczycka et al since Kulczycka et al teaches that accurate simulation and rendering with virtual paint in the automotive industry has many benefits including less preparation time involved in visualizing virtual paints than painting a real vehicle, saving money by limiting the number of vehicles that are needed for paint evaluation that have to be painted, stored or shipped, and allowing preliminary automotive paint selection using a computer-generated visualization for initial screening of potential paints (column 2, lines 3-15).

20. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder et al in view of Kulczycka et al as applied to claims 1 and 14 above, further in view of Stat-Ease, Inc. ("Design-Expert Software Version 6 User's Guide, pages 1-1-1-3, 7-1-7-38, 2000), herein referred to as "Stat-Ease".

21. Snyder et al in view of Kulczycka et al teaches predicting and verifying the predicted performance of an ingredient-determined paint formula.

22. Snyder et al does not expressly teach wherein the step of verifying the predicted performances of the ingredient-determined paint formula further comprises the step of

representing goodness of fit with discrete value between required performances stored in a database and the predicted performances of the ingredient-determined paint.

23. Stat-Ease teaches Design-Expert software that is used for design of experiments that is used to optimize a product or process being designed and offers the designer additional experimental designs, flexibility and various analysis tools (pages 1-1-1-2). Stat-Ease teaches the use of Design expert for mixture experiments (page 7-1, paragraph 1), wherein the mixture is designed by entering mixture components (pages 7-2-7-5), the experiment on the mixture is run (page 7-5, last paragraph) and the results are analyzed by studying the goodness of fit of the results, providing a list of actual verses predicted response values, plotting residuals verses predicted values, and a plot to show deviation of a mixture from a reference blend (pages 7-10-7-17, 7-22).

24. Snyder et al in view of Kulczycka et al and Stat-Ease are analogous art since they are both directed to the design of a mixture and the prediction and verification of the performance of the mixture.

25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the predicting and verifying the predicted performance of ingredient-determined paint formula as taught by Snyder et al in view of Kulczycka et al to further include representing goodness of fit with discrete values between the required performance and the predicted performance of a mixture as taught by Stat-Ease since Stat-Ease teaches Design-Expert software that is used for design of experiments that is used to optimize a product or process being designed and offers the designer additional experimental designs, flexibility and various analysis tools (pages 1-1-1-2).

Response to Arguments

26. Applicant's arguments, see page 6, lines 10-11, filed 6/26/07, with respect to the rejection(s) of claim(s) 1 and 14 under Snyder et al have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the amendments to the claims filed 6/26/07.

27. Applicant's arguments filed 6/26/07, regarding Stat-Ease failing to describe at least "verifying the predicted performances of the ingredient-determined paint formula" have been fully considered but they are not persuasive. The recited sections of Stat-Ease (pages 7-10-7-17) show the design of a mixture and the statistical analysis of the results of varying components of the mixture. The Examiner asserts that this analysis of the results of experiments run with the designed mixture teach "verifying" the predicted performance" of an ingredient-determined mixture. However, in view of the amendments to the claims, filed 6/26/07, Stat-Ease is no longer relied upon to teach this limitation.

Conclusion

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

29. Jahn et al (US Patent 6,073,055) teaches a paint simulation computer program that performs design of experiments calculations based upon data from a paint analyzer device.

30. Dumont-Becle et al ("Multi-Texturing Approach for Paint Appearance Simulation on Virtual Vehicles", Sept. 2001, DSC2001) teaches paint appearance simulation including the building and combination of different textures and a validation step performed through subjective and quantitative comparisons between simulation results and reality.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary C. Jacob whose telephone number is 571-272-6249. The examiner can normally be reached on Tuesday-Thursday 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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